



USACRC

Digital Collection, Analysis, and Integration Lab



The Digital Source Collector

DCAI Lab Mission

- Support the CAI and IAI Board President with data collected from DSC's
 - Assist in analysis of the Data
 - Provide an accident animation upon request
 - Provide a Technical Report of the Data upon request
- Support Army Shoot Down Analysis Team (ASDAT)
- Support the ACT-E program (DOTD)
- Assist with the Development and Management of the Army DSC Program; including MFOQA and CBM
- Assist units with other needs as time and resources allow
(with cost savings through data analysis)

The Digital Source Collector



LUH-

72A

- USACR/SC 72A has capability of downloading and analyzing data
- All LUH-72A will be equipped with L-3 FA5001 CV/FDR System
- 25 hours of data, 2 hours of cockpit audio (4 channels)

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LUH-72A DSC Location



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LUH-72A DSC

Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the CVFDR to the DCAI Lab
- When sending the DSC unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab

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OH-58D

USACR/SC has capability of downloading
and analyzing data
Not a certified crash recorder
No voice

PC-DTS - Mission Software and Hardware
includes a Map, Mission, Flight Data and
Video Cards (PCMCIA Cards)



Modernized
Signal
Processing
Unit (MSPU)

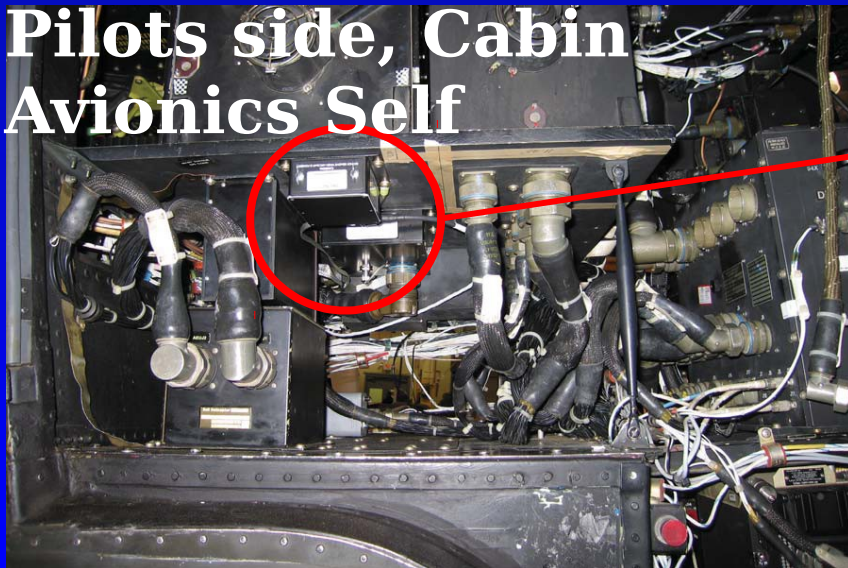


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**OH-58D DSC
Location**

**Pilots side, Cabin
Avionics Self**



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OH-58D DSC Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the DTC, DTM, or PCDTS Card(s) or .DAT file to
the DCAI Lab for Download & Processing
- If sending the DSC unit, include a Pre-paid method to

The Digital Source Collector



UH-60A/L/M

- USACR/SC has capability of downloading and analyzing data
- All UH-60M equipped with Goodrich IVHMS and Penny & Giles CV/FDR System
- 13 hours of data, 2 hours of

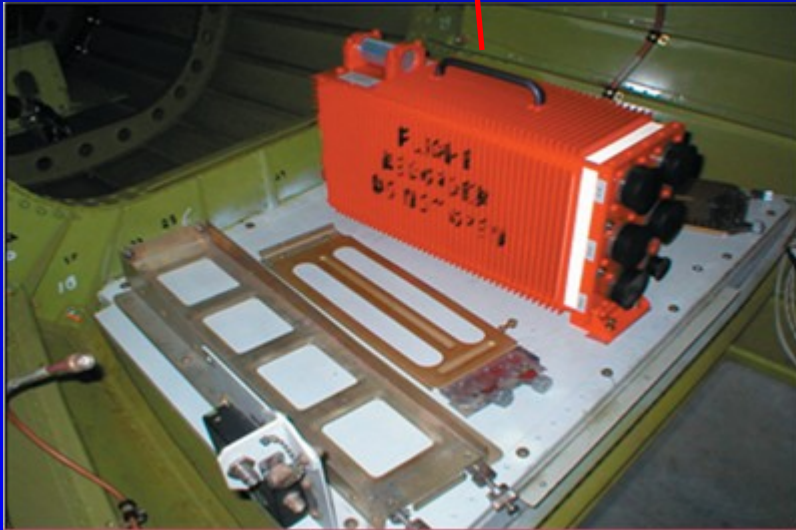
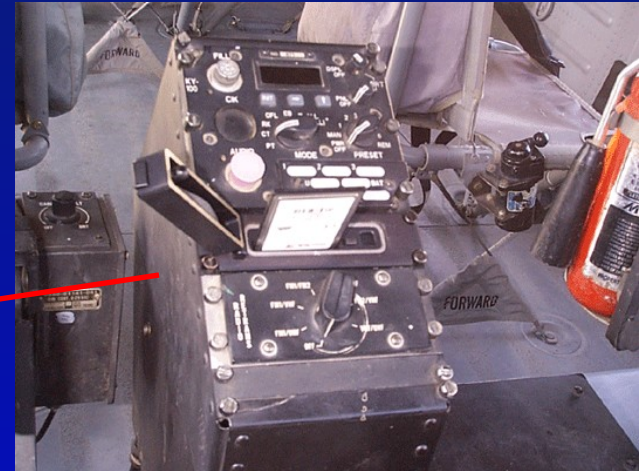
All UH-60A/L/M and all variants will be equipped with the same system over time

IVHMS and CV/FDR

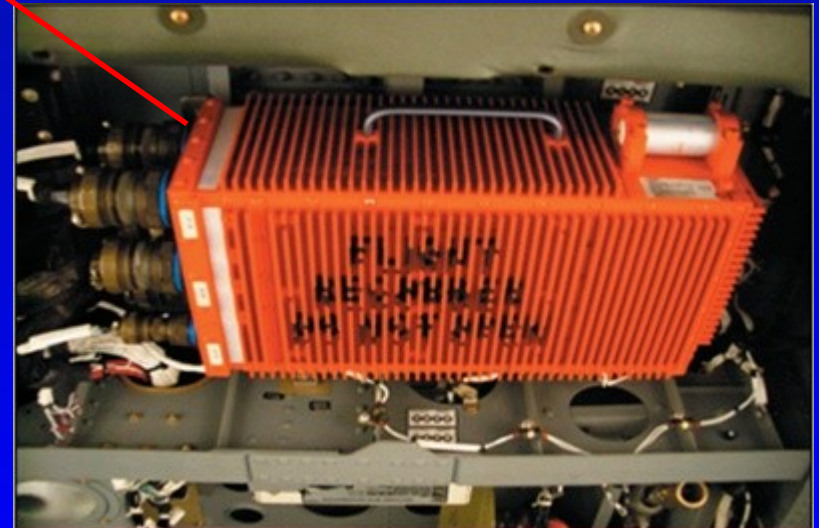


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UH-60A/L/M DSC



UH-60 A/L



UH-60 M

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UH-60 DSC

Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the PCMCIA card and IVHMS unit or .MUD file(s) and CV/FDR files for IVHMS/CVFDR aircraft
- If sending the DSC unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab

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AH-64D/E

- USACR/SC has capability of down loading and analyzing data
- MDR with 80 MB/ 6 GB CSMU
- 33 Hours of Data (minimum)
- MDR already proven critical in the investigation of AH-64D Cockpit Audio 30 min (2 channels)
- Apache Longbow accidents
- All AH-64D/Es are equipped with MDR



Maintenance Data Recorder (MDR)

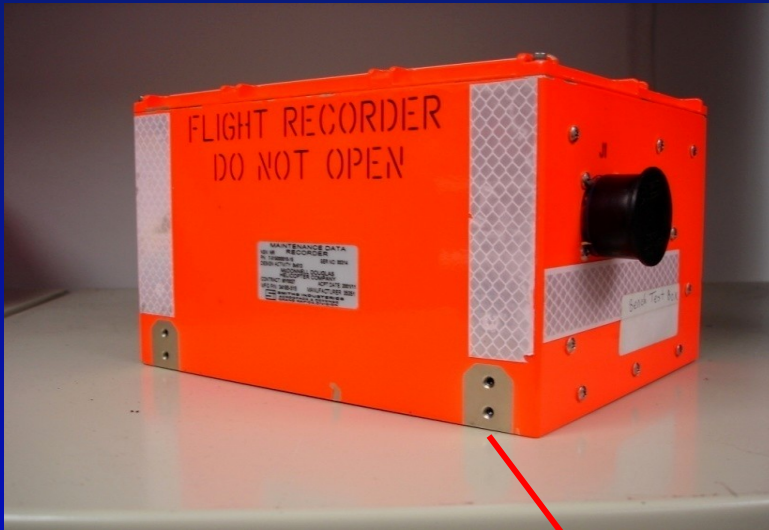


Modernized Signal Processing Unit (MSPU)



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AH-64D/E DSC Locations



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AH-64D/E DSC

Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the MDR or BIN Files (4) to the DCAI Lab for Download & Processing
- If sending the DSC unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab

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**FA-2500 (APR)
CV/FDR**



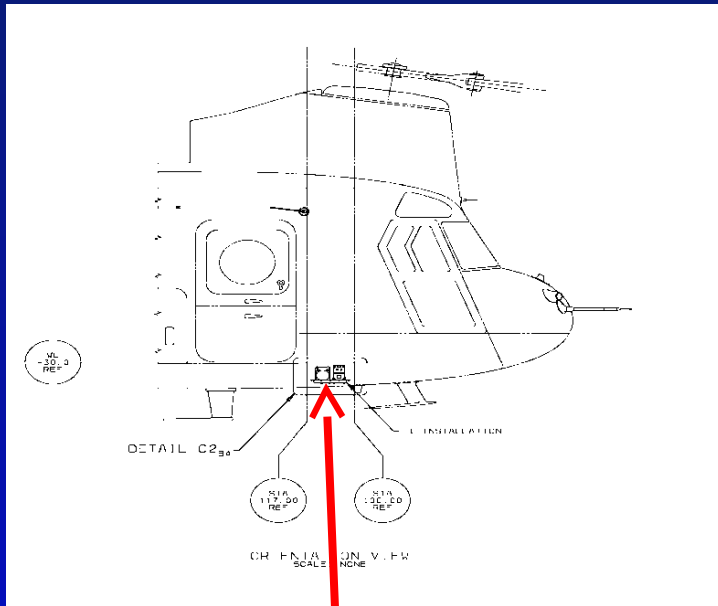
CH-47F

USACR/SC has capability of downloading and analyzing data

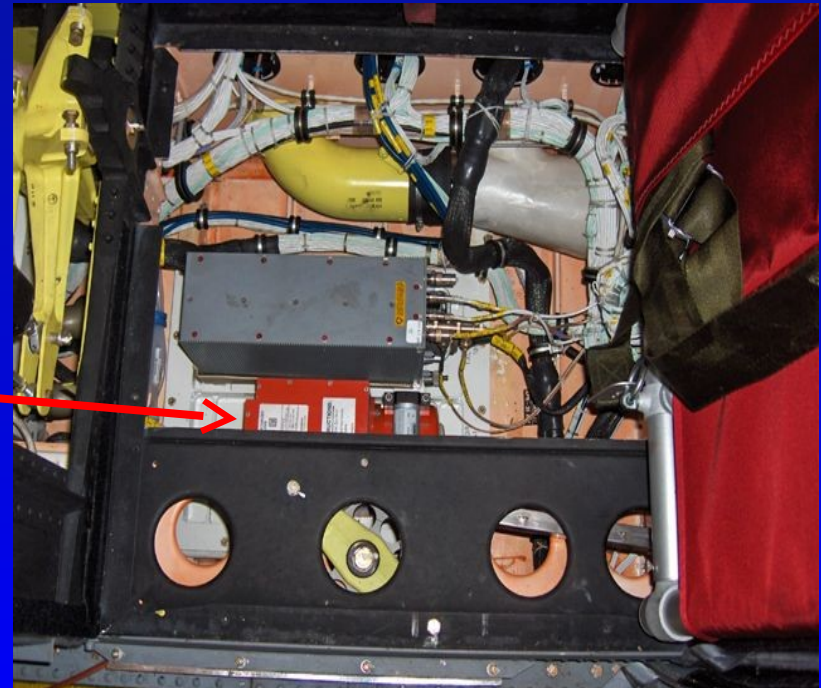
All CH-47F will have a CV/FDR

9 hours of data, 2 hours of cockpit audio (4 channels)

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CH-47F DSC
Location



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CH-47F DSC

Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the CVFDR to the DCAI Lab
- When sending the DSC unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab

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Cockpit Voice Recorder (CVR)



FIXED WING

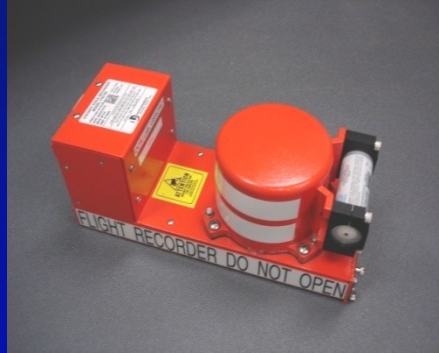
- USACRC has capability of downloading and analyzing data
- Cockpit voice recorders
- Older Airframes still have "Mag Tape"

■ Secretary of Defense, "You should install Flight Data Recorders on your fixed-wing, commercial derivative aircraft."

Flight Data Recorder (FDR)



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F/W DSC

Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the FDR and CVR to the DCAI Lab
- When sending the DSC unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab

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MQ-1C (Warrior)

- USACR/SC has the capability to download and process the data
- Shelter records all uplink and down link data



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MQ-5B (Hunter)

- USACR/SC has the capability of down loading and analyzing data
- Shelter records all uplink and down link data



The Digital Source Collector



MQ-7B (Shadow)

- USACR/SC has the capability of down loading and analyzing data
- Shelter records all uplink and down link data



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Other Data Sources

- Disk Drives; PCMCIA Cards; Health Usage Monitoring System (HUMS) and Helicopter Operation Monitoring System (HOMS); Aircraft Systems Computers; EDMs
- Global Positioning Systems (GPS): Non-crashworthy device;
current track usually 1 sample/sec; Selected waypoints; Battery backup or non volatile memory, Fixed memory or flashcard storage
- Non Volatile Memory (NVM) DSCs: Flight Management

The Digital Source Collector

PROCEDURES

Contact the DCAI Lab with your request and the Lab will provide instructions on how to proceed

Contact information:

- Mail the DSC to: Commander, US Army Combat Readiness/Safety Center; ATTN: DCAI Lab; Bldg 4905, Ruf Ave; Ft Rucker, AL 36362-5363
- Email the data, along with a short description of the problem to:

or William.F.Rhode.civ@mail.mil;

Timothy.S.Ashcom.civ@mail.mil;

Carl.F.Shea.civ@mail.mil;

William.Rhode@us.army.smil.mil;

Provide a brief history of the accident/incident

Provide unit POC with phone number & email address

usarmy.rucker.hqda-secarmy.list.safe-dcai@mail.mil

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DCAI Lab will Provide

- Provide the Board President or Unit with the downloaded, processed and analyzed data in excel spreadsheet format with areas of interest/concern highlighted
- The Lab will assist with the following:
 - Assistance with Data Interpretation
 - Develop 3D Animation (Upon Request)
 - Develop Technical Report (Upon Request)
 - Coordinate with AED for Airworthiness Release

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ACCIDENT ANIMATION

- CAI/ IAI – DCAI Lab develops a 3D animation from DSC data (flight data, video, audio, etc), Sent to Board President no sooner than 2 Days prior to out brief.
- Animations are handled as FOUO
- Animation Release – GO to GO
- Audio is NOT releasable
- Flight data and audio transcripts are releasable data

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OH-58D/UH-60/AH-64 DSC Procedures

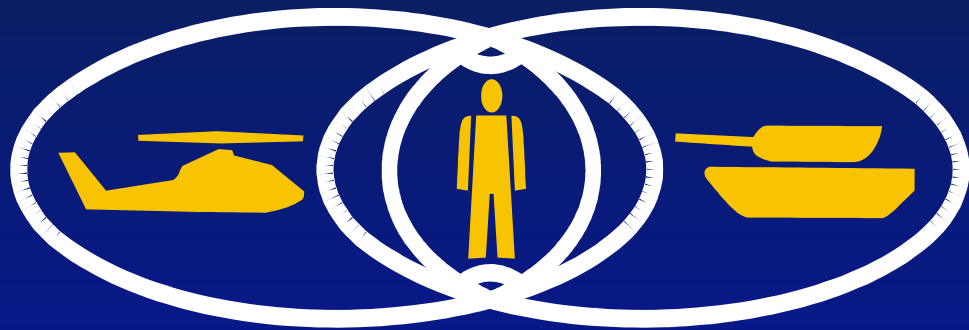
- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send PCDTS Card(s) or .DAT/.MUD/.BIN file to
 - the DCAI Lab for Download & Processing
- If sending the DSC Unit, include a Pre-paid method to

The Digital Source Collector



CH-47F & Fixed Wing DSC Procedures

- Contact the DCAI Lab with your request
- Provide unit POC w/phone number & email address
- Give a brief description of the accident/incident
- Send the CVFDR to the DCAI Lab
- When sending the DSC Unit, include a Pre-paid method to return the DSC to owning unit (UPS/FEDEX/DHL etc.)
- DO NOT attempt to Download or Process the data without coordinating with the DCAI Lab



U.S. ARMY COMBAT READINESS/SAFETY CENTER



Creating Information From Recorder
Data

Bill Rhode, Chief, DCAI Lab, USACRC

Tim Ashcom, FDR Analyst, USACRC

Carl Shea, FDR Analyst, USACRC

U.S. ARMY COMBAT READINESS/SAFETY CENTER

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